

WHAT IS CLAIMED IS:

1. A transformed cell that expresses (i) a functional estrogen receptor expressed from a vector encoding the estrogen receptor; (ii) a C/EBP transcription factor that acts on a hepatic lipase (HL) promoter expressed from a vector encoding the transcription factor; and (iii) a reporter gene operatively associated with an HL promoter.

2. The cell of claim 1, wherein the estrogen receptor is a human estrogen receptor.

3. The cell of claim 2, wherein the estrogen receptor is an ER α .

4. The cell of claim 1, wherein the transcription factor is C/EBP α .

5. The cell of claim 1, wherein the HL promoter is positioned proximal to the 5' end of the human HL coding region.

6. The cell of claim 5, wherein the HL promoter is the human HL promoter region from -1557 to +43, relative to the HL coding region start site (0).

7. The cell of claim 1, wherein the reporter gene encodes a protein selected from the group consisting of luciferase, green fluorescent protein, yellow fluorescent protein, β -galactosidase, chloramphenicol transferase, horseradish peroxidase, and alkaline phosphatase.

8. The cell of claim 7, wherein the reporter gene is luciferase.

9. The cell of claim 1, wherein the cell is a hepatocarcinoma cell.

10. The cell of claim 9, wherein the cell is a HepG2 cell.

1 11. An assay system for estrogen receptor ligands that modulate HL promoter
2 activity comprising a population of transformed cells of claim 1, wherein the transformed cells
3 are present in a number in a single assay system that is sufficient to express a detectable amount
4 of a protein encoded by the reporter gene under conditions of maximum reporter gene
5 expression.

1 12. A method for identifying a compound that regulates an HL promoter
2 through an estrogen receptor, which method comprises detecting a change in the level of
3 expression of a reporter gene in an assay system of claim 11 contacted with a test compound,
4 wherein detection of a change in the level of expression of the reporter gene indicates that the test
5 compound regulates the HL promoter through the estrogen receptor.

13. The method according to claim 12, wherein the test compound is an
estrogen or an estrogen analog.

14. The method according to claim 12, wherein the level of reporter gene
expression decreases when contacted with a test compound that regulates the HL promoter
through the estrogen receptor.

15. The method according to claim 12, wherein the estrogen receptor is a
human estrogen receptor.

16. The method according to claim 15, wherein the estrogen receptor is an
ER α .

17. The method according to claim 12, wherein the transcription factor is
C/EBP α .

18. The method according to claim 1, wherein the HL promoter is positioned

proximal to the 5' end of the human HL coding region.

19. The method according to claim 18, wherein the HL promoter is the human HL promoter region from -1557 to +43, relative to the HL coding region start site (0).

20. The method according to claim 12, wherein the reporter gene encodes a protein selected from the group consisting of luciferase, green fluorescent protein, yellow fluorescent protein, β -galactosidase, chloramphenicol transferase, horseradish peroxidase, and alkaline phosphatase.

21. The method according to claim 20, wherein the reporter gene is luciferase.

22. The method according to claim 12, wherein the cell is a hepatocarcinoma cell.

23. The method according to claim 22, wherein the cell is a HepG2 cell.

24. The method according to claim 12, wherein the compound decreases the level of expression of the reporter gene through the estrogen receptor.

25. The cell of claim 1, wherein the functional estrogen receptor, the C/EBP transcription factor, and the reporter gene operatively associated with the HL promoter are expressed from separate vectors.